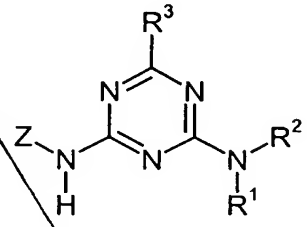
Patent Claims

1. Compounds of the general formula (I)



(I),

in which

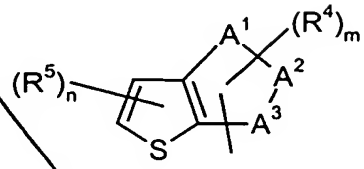
R^1 represents hydrogen or represents optionally substituted alkyl,

R^2 represents hydrogen, represents formyl or represents in each case optionally substituted alkyl, alkylcarbonyl, alkoxycarbonyl or alkylaminocarbonyl,

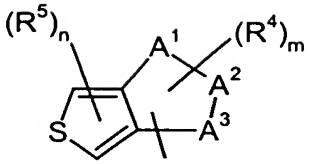
or the grouping $N(R^1R^2)$ also represents dialkylaminoalkylideneamino,

R^3 represents hydrogen, represents halogen, represents optionally substituted alkyl, represents in each case optionally substituted alkylcarbonyl, alkoxycarbonyl, alkoxy, alkylthio, alkylsulphinyl or alkylsulphonyl, represents in each case optionally substituted alkenyl or alkinyl, or represents optionally substituted cycloalkyl, and

Z represents one of the thienocycloalk(en)yl groupings below



(Z^1)



(Z^2)

in which

m represents the numbers 0, 1, 2, 3 or 4,

n represents the numbers 0, 1 or 2,

A^1 represents O (oxygen), S (sulphur), –CO-, -CS- or alkanediyl (alkylene),

A^2 represents O (oxygen), S (sulphur), –CO-, -CS- or alkanediyl (alkylene),

A^3 represents O (oxygen), S (sulphur), –CO-, -CS- or alkanediyl (alkylene),

- with the proviso that at least one of the groupings A^1, A^2, A^3 represents alkanediyl and that two adjacent groups do not simultaneously represent S or O -

R^4 represents amino, cyano, carbamoyl, thiocarbamoyl, formyl, halogen, or represents in each case optionally substituted alkyl, alkylcarbonyl, alkoxy, alkoxycarbonyl, alkylthio, alkylsulphinyl, alkylsulphonyl, alkylamino, dialkylamino, alkylcarbonylamino, alkoxycarbonylamino, alkylsulphonylamino,

A' cont

alkenyl, alkinyl, alkenylcarbonyl, alkinylcarbonyl, aryl, arylcarbonyl or arylalkyl, and

R^5 represents nitro, amino, cyano, carbamoyl, thiocarbamoyl, formyl, halogen, or represents in each case optionally substituted alkyl, alkylcarbonyl, alkoxy, alkoxycarbonyl, alkylthio, alkylsulphinyl, alkylsulphonyl, alkylamino, dialkylamino, alkylcarbonylamino, alkoxycarbonylamino, alkylsulphonylamino, alkenyl, alkinyl, alkenylcarbonyl, alkinylcarbonyl, aryl, arylcarbonyl or arylalkyl.

2. Compounds according to Claim 1, characterized in that

m represents the numbers 0, 1 or 2,

A^1 represents O (oxygen), S (sulphur), -CO-, -CS- or alkanediyl (alkylene) having 1 to 3 carbon atoms,

A^2 represents O (oxygen), S (sulphur), -CO-, -CS- or alkanediyl (alkylene) having 1 to 3 carbon atoms,

A^3 represents O (oxygen), S (sulphur), -CO-, -CS- or alkanediyl (alkylene) having 1 to 3 carbon atoms,

- with the proviso that at least one of the groupings A^1, A^2, A^3 represents alkanediyl having 1 to 3 carbon atoms and that two adjacent groups do not simultaneously represent S or O -

R^1 represents hydrogen or represents optionally cyano-, halogen- or C_1-C_4-alkoxy-substituted alkyl having 1 to 6 carbon atoms,

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R^2 represents hydrogen, represents formyl or represents in each case optionally cyano-, halogen- or C_1-C_4-alkoxy-substituted alkyl, alkylcarbonyl, alkoxycarbonyl or alkylaminocarbonyl having in each case 1 to 6 carbon atoms in the alkyl groups, or

the grouping $N(R^1R^2)$ represents dialkylaminoalkylideneamino having in each case up to 4 carbon atoms in the alkyl groups or alkylidene groups,

R^3 represents hydrogen, represents halogen, represents optionally cyano-, halogen-, hydroxyl-, C_1-C_4-alkoxy- or C_1-C_4-alkylthio-substituted alkyl having 1 to 6 carbon atoms, represents in each case optionally cyano-, halogen- or C_1-C_4-alkoxy-substituted alkylcarbonyl, alkoxycarbonyl, alkoxy, alkylthio, alkylsulphinyl or alkylsulphonyl having in each case 1 to 6 carbon atoms in the alkyl groups, represents in each case optionally halogen-substituted alkenyl or alkinyl having in each case 2 to 6 carbon atoms, or represents optionally cyano-, halogen- or C_1-C_4-alkyl-substituted cycloalkyl having 3 to 6 carbon atoms,

R^4 represents amino, cyano, carbamoyl, thiocarbamoyl, formyl, halogen, represents in each case optionally cyano-, halogen- or C_1-C_4-alkoxy-substituted alkyl, alkylcarbonyl, alkoxy, alkoxycarbonyl, alkylthio, alkylsulphinyl, alkylsulphonyl, alkylamino, dialkylamino, alkylcarbonylamino, alkoxycarbonylamino or alkylsulphonylamino having in each case 1 to 6 carbon atoms in the alkyl groups, represents in each case optionally cyano- or halogen-substituted alkenyl, alkinyl, alkenylcarbonyl or alkinylcarbonyl having in each case 2 to 6 carbon atoms in the alkenyl or alkinyl groups, or represents in each case optionally nitro-, cyano-, halogen-, C_1-C_4-alkyl-, C_1-C_4-halogenoalkyl-, C_1-C_4-alkoxy-, C_1-C_4-halogenoalkoxy- or C_1-C_4-alkoxycarbonyl-substituted aryl, arylcarbonyl or arylalkyl having in each

A' cont

case 6 or 10 carbon atoms in the aryl group and optionally 1 to 4 carbon atoms in the alkyl moiety, and

R^5 represents nitro, amino, cyano, carbamoyl, thiocarbamoyl, formyl, halogen, represents in each case optionally cyano-, halogen- or C_1-C_4-alkoxy-substituted alkyl, alkylcarbonyl, alkoxy, alkoxycarbonyl, alkylthio, alkylsulphinyl, alkylsulphonyl, alkylamino, dialkylamino, alkylcarbonylamino, alkoxycarbonylamino or alkylsulphonylamino having in each case 1 to 6 carbon atoms in the alkyl groups, represents in each case optionally cyano- or halogen-substituted alkenyl, alkinyl, alkenylcarbonyl or alkinylcarbonyl having in each case 2 to 6 carbon atoms in the alkenyl or alkinyl groups, or represents in each case optionally nitro-, cyano-, halogen-, C_1-C_4-alkyl-, C_1-C_4-halogenoalkyl-, C_1-C_4-alkoxy-, C_1-C_4-halogenoalkoxy- or C_1-C_4-alkoxycarbonyl substituted aryl, arylcarbonyl or arylalkyl having in each case 6 or 10 carbon atoms in the aryl group and optionally 1 to 4 carbon atoms in the alkyl moiety.

3. Compounds according to Claim 1 or 2, characterized in that

A^1 represents O (oxygen), S (sulphur), -CO-, -CS-, methylene, dimethylene or trimethylene,

A^2 represents O (oxygen), S (sulphur), -CO-, -CS-, methylene, dimethylene or trimethylene,

A^3 represents O (oxygen), S (sulphur), -CO-, -CS-, methylene, dimethylene or trimethylene,

A' cont

- with the proviso that at least one of the groupings A^1, A^2, A^3 represents methylene, dimethylene or trimethylene and that two adjacent groups do not simultaneously represent S or O -

R^1 represents hydrogen or represents in each case optionally cyano-, fluorine-, chlorine-, methoxy- or ethoxy-substituted methyl, ethyl, n- or i-propyl,

R^2 represents hydrogen, represents formyl or represents in each case optionally cyano-, fluorine-, chlorine-, methoxy- or ethoxy-substituted methyl, ethyl, n- or i-propyl, acetyl, propionyl, n- or i-butyroyl, methoxycarbonyl, ethoxycarbonyl, n- or i-propoxycarbonyl, methylaminocarbonyl, ethylaminocarbonyl, n- or i-propylaminocarbonyl, or

the grouping $N(R^1R^2)$ represents dimethylaminomethyleneamino or diethylaminomethyleneamino,

R^3 represents hydrogen, represents fluorine, chlorine, bromine, represents in each case optionally cyano-, fluorine-, chlorine-, bromine-, hydroxyl-, methoxy-, ethoxy-, n- or i-propoxy-, methylthio-, ethylthio-, n- or i-propylthio-substituted methyl, ethyl, n- or i-propyl, n-, i- or s-butyl, represents in each case optionally cyano-, fluorine-, chlorine-, methoxy- or ethoxy- substituted acetyl, propionyl, n- or i-butyroyl, methoxycarbonyl, ethoxycarbonyl, n- or i-propoxycarbonyl, methoxy, ethoxy, n- or i-propoxy, methylthio, ethylthio, n- or i-propylthio, methylsulphinyl, ethylsulphinyl, n- or i-propylsulphinyl, methylsulphonyl, ethylsulphonyl, n- or i-propylsulphonyl, represents in each case optionally fluorine-, chlorine- or bromine-substituted ethenyl, propenyl, butenyl, ethinyl, propinyl or butinyl, or represents in each case optionally cyano-, fluorine-, chlorine-, methyl-

or ethyl-substituted cyclopropyl, cyclobutyl, cyclopentyl or cyclohexyl,

R^4 represents amino, cyano, carbamoyl, thiocarbamoyl, formyl, fluorine, chlorine, bromine, represents in each case optionally cyano-, fluorine-, chlorine-, methoxy- or ethoxy-substituted methyl, ethyl, n- or i-propyl, acetyl, propionyl, n- or i-butyroyl, methoxy, ethoxy, n- or i-propoxy, methoxycarbonyl, ethoxycarbonyl, n- or i-propoxycarbonyl, methylthio, ethylthio, n- or i-propylthio, methylsulphinyl, ethylsulphinyl, n- or i-propylsulphinyl, methylsulphonyl, ethylsulphonyl, n- or i-propylsulphonyl, , methylamino, ethylamino, n- or i-propylamino, dimethylamino, diethylamino, acetylamino, propionylamino, n- or i-butyroylamino, methoxycarbonylamino, ethoxycarbonylamino, n- or i-propoxycarbonylamino, methylsulphonylamino, ethylsulphonylamino, n- or i-propylsulphonylamino, represents in each case optionally cyano-, fluorine-, chlorine- or bromine-substituted ethenyl, propenyl, butenyl, ethinyl, propinyl, butinyl, ethenylcarbonyl, propenylcarbonyl, butenylcarbonyl, ethinylcarbonyl, propinylcarbonyl or butinylcarbonyl, or represents in each case optionally nitro-, cyano-, fluorine-, chlorine-, bromine-, methyl-, ethyl-, n- or i-propyl-, n-, i-, s- or t-butyl-, trifluoromethyl-, methoxy-, ethoxy-, n- or i-propoxy-, difluoromethoxy-, trifluoromethoxy-, methoxycarbonyl-, ethoxycarbonyl-, n- or i-propoxycarbonyl-substituted phenyl, benzoyl or benzyl, and

R^5 represents nitro, amino, cyano, carbamoyl, thiocarbamoyl, formyl, fluorine, chlorine, bromine, represents in each case optionally cyano-, fluorine-, chlorine-, methoxy- or ethoxy-substituted methyl, ethyl, n- or i-propyl, acetyl, propionyl, n- or i-butyroyl, methoxy, ethoxy, n- or i-propoxy, methoxycarbonyl, ethoxycarbonyl, n- or i-propoxycarbonyl, methylthio, ethylthio, n- or i-propylthio, methylsulphinyl,

A' cont

ethylsulphinyl, n- or i-propylsulphinyl, methylsulphonyl, ethylsulphonyl, n- or i-propylsulphonyl, methylamino, ethylamino, n- or i-propylamino, dimethylamino, diethylamino, acetylamino, propionylamino, n- or i-butyroylamino, methoxycarbonylamino, ethoxycarbonylamino, n- or i-propoxycarbonylamino, methylsulphonylamino, ethylsulphonylamino, n- or i-propylsulphonylamino, represents in each case optionally cyano-, fluorine-, chlorine- or bromine-substituted ethenyl, propenyl, butenyl, ethinyl, propinyl, butinyl, ethenylcarbonyl, propenylcarbonyl, butenylcarbonyl, ethinylcarbonyl, propinylcarbonyl or butinylcarbonyl, or represents in each case optionally nitro-, cyano-, fluorine-, chlorine-, bromine-, methyl-, ethyl-, n- or i-propyl-, n-, i-, s- or t-butyl-, trifluoromethyl-, methoxy-, ethoxy-, n- or i-propoxy-, difluoromethoxy-, trifluoromethoxy-, methoxycarbonyl-, ethoxycarbonyl-, n- or i-propoxycarbonyl-substituted phenyl, benzoyl or benzyl.

4. Compounds according to any of Claims 1 to 3, characterized in that

A^1 represents methylene or dimethylene,

A^2 represents methylene or dimethylene,

A^3 represents methylene or dimethylene,

R^1 represents hydrogen,

R^2 represents hydrogen, represents formyl or represents in each case optionally fluorine-, chlorine-, methoxy- or ethoxy-substituted acetyl, propionyl, n- or i-butyroyl, methoxycarbonyl, ethoxycarbonyl, n- or i-propoxycarbonyl, or

the grouping $N(R^1R^2)$ represents dimethylaminomethyleneamino,

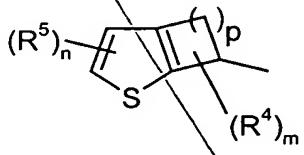
R^3 represents in each case optionally fluorine- or chlorine-substituted methyl, ethyl, n- or i-propyl,

R^4 represents cyano, fluorine, chlorine, bromine, or represents in each case optionally fluorine- or chlorine-substituted methyl, ethyl, methoxy or ethoxy, and

R^5 represents nitro, cyano, fluorine, chlorine, bromine, or represents in each case optionally fluorine- or chlorine-substituted methyl, ethyl, methoxy or ethoxy.

5. Compounds according to any of claims 1 to 4, characterized in that

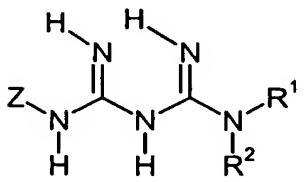
Z represents



where

p represents 2, 3 or 4, and n, m, R^4 and R^5 are as defined in any of Claims 1 to 4.

6. Process for preparing substituted triazines according to any of Claims 1 to 5, characterized in that biguanides of the general formula (II)



(II),

in which

R^1, R^2 and Z are as defined in any of Claims 1 to 5,

and/or acid adducts of compounds of the general formula (II)

are reacted with alkoxycarbonyl compounds of the general formula (III)

$$R^3\text{-CO-OR'} \qquad \text{(III)}$$

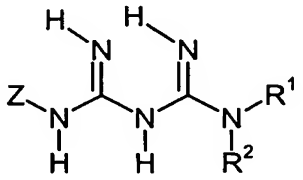
in which

R^3 is as defined in any of Claims 1 to 4 and

R' represents alkyl,

if appropriate in the presence of a reaction auxiliary and if appropriate in the presence of a diluent, and, if appropriate, further conversions within the scope of the definition of the substituents are carried out by customary methods on the resulting compounds of the general formula (I).

7. Compounds of the formula (II)



(II),

characterized in that

R^1, R^2 and Z are as defined in any of Claims 1 to 5,

and the acid adducts of the compounds of the general formula (II).

8. Process for preparing compounds according to Claim 7, characterized in that amino compounds of the general formula (IV)

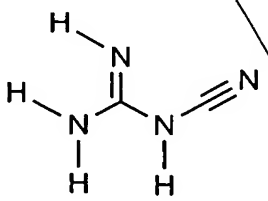
$$Z\text{-}NH_2 \qquad (IV)$$

in which

Z is as defined in any of Claims 1 to 5,

and/or acid adducts of compounds of the general formula (IV)

are reacted with cyanoguanidine of the formula (V)



(V)

if appropriate in the presence of a reaction auxiliary and if appropriate in the presence of a diluent at temperatures between 100°C and 200°C.

9. Method for controlling undesirable vegetation, characterized in that at least one compound according to any of Claims 1 to 5 is allowed to act on undesirable plants and/or their habitats.

10. Use of at least one compound according to any of Claims 1 to 5 for controlling undesirable plants.

11. Herbicidal composition, characterized in that it comprises a compound according to any of Claims 1 to 5 and customary extenders and/or surfactants.